5-4

NAME Key DATE

Practice

Student Edition
Pages 274–280

Factoring

Factor completely.

1. $15a^2b - 10ab^2$
$5ab(3a - 2b)$

2. $2x^3y - x^2y + 5xy^2 + xy^3$
$xy(2x^2 - x + 5y + y^2)$

3. $16r^2 - 169$
$(4r + 13)(4r - 13)$

4. $c^2 - 49$
$(c + 7)(c - 7)$

5. $2y^2 - 242$
$2(y^2 - 121)$
$2(y + 11)(y - 11)$

6. $x^3 + 8$
$(x + 2)(x^2 - 2x + 4)$

7. $8m^3 - 1$
$(2m - 1)(4m^2 + 2m + 1)$

8. $b^4 - 81$
$(b^2 + 9)(b + 3)(b - 3)$

9. $x^2 - 3x - 10$
$(x - 5)(x + 2)$

10. $r^3 + 3r^2 - 54r$
$r(r^2 + 3r - 54)$
$r(r + 9)(r - 6)$

11. $4a^2 + a - 3$
$4a^2 + 4a - 3a - 3$
$4a(a + 1) - 3(a + 1)$
$(4a - 3)(a + 1)$

12. $2t^3 + 32t^2 + 128t$
$2t(t^2 + 16t + 64)$
$2t(t + 8)^2$

13. $y^2 + 20y + 96$
$(y + 12)(y + 8)$

14. $6n^2 - 11n - 2$
$6n^2 - 12n + 1n - 2$
$6n(n - 2) + 1(n - 2) \rightarrow (6n + 1)(n - 2)$

15. $x^2 - 8x + 16$
$(x - 4)^2$

16. $21 - 7t + 3r - rt$
$7(3 - t) + r(3 - t)$
$(7 + r)(3 - t)$

17. $x^2 + 2x - xy - 2y$
$x(x + 2) - y(x + 2)$
$(x - y)(x + 2)$

18. $x^2 + 2xy + 2x + y^2 + 2y - 8$

19. $4x^4 - 4x^2$
$4x^2(x^4 - 1)$
$4x^2(x^2 + 1)(x + 1)(x - 1)$

20. $k^3 - 2k^2r - 3kr^2$
$k(k^2 - 2kr - 3r^2)$
$k(k - 3r)(k + r)$

21. $45x^2 - 80y^2$
$5(9x^2 - 16y^2)$
$5(3x + 4y)(3x - 4y)$

22. $36a^3b^2 + 66a^2b^3 - 210ab^4$

23. $4a^2 + 12ab + 9b^2 - 25c^2$

24. $81x^4 - 16$
$(9x^2 + 4)(3x + 2)(3x - 2)$

$5y^5 + 135y^2$
$5y^2(y^3 + 27)$
$5y^2(y + 3)(y^2 - 3y + 9)$

26. $18p^3 - 51p^2 - 135p$
$3p(6p^2 - 17p - 45)$
$3p(6p^2 - 27p + 10p - 45)$
$3p[3p(2p - 9) + 5(2p - 9)]$
$3p(3p + 5)(2p - 9)$

$6 \cdot 45 = 270$
$27 \cdot 10$